

(b) The equipment described in this subpart must be type accepted.

(c) The term *transmitter* means the transmitter unit and all auxiliary equipment necessary to make this unit operate as a main or emergency transmitter in a ship station at sea. Each separate motor-generator, rectifier, or other unit required to convert the ship primary power to the phase, frequency, or voltage necessary to energize the transmitter unit is considered a component of the transmitter.

(d) *Average ship station antenna* means an actual antenna installed on board

ship having a capacitance of 750 picofarads and an effective resistance of 4 ohms at a frequency of 500 kHz, or an artificial antenna having the same electrical characteristics.

§ 80.253 Technical requirements for main transmitter.

(a) The following table gives the operating carrier frequency, emission, modulation and average ship station antenna power requirements for the main transmitter.

Operating frequency (kHz)	Frequency tolerance		Class of emission	Percentage modulation for amplitude modulation	Modulation frequency for amplitude modulation	Power into average ship station antenna
	Parts ¹ in 10 ⁶	Hz ²				
500 kHz	1,000	20	A2A and A2B or H2A and H2B.	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 Hertz, except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz.	Not less than 200 watts.
Do	1,000	20	A1A or J2A	Not less than 160 watts.
410 and 2 working frequencies in the band 415 to 525.	1,000	20	A2A and A3N or H2A and H3N.	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 Hertz, except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz.	Not less than 200 watts.
Do	1,000	20	A1A and N0N or J2A and J3N.	Not less than 160 watts.

¹ For equipment type accepted or type approved before November 30, 1977.

² For equipment type accepted or type approval after November 29, 1977.

(b) A main transmitter must operate at its required antenna power when adjusted to any required operating frequency and energized by the main power supply of the ship station or by an equivalent power supply.

(c) A main transmitter must be equipped to measure (1) antenna current, (2) transmitter power supply voltages, and (3) anode or collector current(s).

(d) The antenna power must be determined at the operating carrier frequency by the product of the antenna resistance and the square of the average antenna current, both measured at the same point in the antenna circuit at approximately ground potential.

(e) A main transmitter producing more than 250 watts output power must

have the output power reduced to not more than 150 watts when used for telegraphy. In stations where a separate telegraph transmitter operable on the same frequencies as the main transmitter with an output power of less than 250 watts, is installed, the power reduction requirement does not apply. Such separate transmitters must not obtain power from the emergency power supply.

§ 80.255 Technical requirements for reserve transmitter.

(a) The following table describes the operating carrier frequency, emission, modulation and average ship station antenna power requirements for the reserve transmitter.